

## New and little-known South African Tabanidae (Diptera)

by

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### SYNOPSIS

Descriptions and illustrations are given of the following three new South African Tabanidae: *Philoliche* (*Ommatiosteres*) *nitida* n. sp., *P. (Phara)* *turpis* n. sp., and *Limata miranda* n. sp. The species *Chrysops calida* Walker, and *Cydistomyia (Amanella) ignota* Usher, are redescribed and figured.

### INTRODUCTION

This paper comprises the descriptions of three new and two previously known species of Tabanidae in the Natal Museum Collection. Amongst a collection of old, undetermined specimens I found two males of *Chrysops calida* Walker. This species was described in 1848 and is still known only on the original pair of imperfect specimens, so I have taken the opportunity to redescribe it. In 1965 I described a new species, *Amanella ignota* Usher, and remarked that the type might be faded. Two much darker, very different looking flies received from Dr. B. M. McIntosh, not at first equated with the pale holotype of *ignota*, proved to belong to that species, so a further description is given to prevent possible synonymies. The three new species described below include two species of *Philoliche* Wied, one in the subgenus *Phara* Walker, the other in the subgenus *Ommatiosteres* Enderlein. These large flies are often not easy to catch; probably on account of the drastic reduction of populations of game animals (and in places of domestic stock) in general, such tabanids appear to be becoming increasingly rare. The third new species, in the genus *Limata* Oldroyd, is based on a female, a brightly-coloured, distinctive fly, from the Hogsback Range in the Eastern Cape Province. I am associating with this specimen a male caught by my husband near Kranskop in Natal; despite repeated visits to this locality no further specimens or females have been found. The prudent course would appear to be to wait for more material. However, for a number of years I have been noticing how the colours of tabanids fade, particularly black turning to brown, and I am now convinced that by far the best course, in this group where pattern is so important for identification, is to describe all new species as soon as possible in order to record the true colour. Obviously it is best to base a description on a large number of specimens from various localities, as infraspecific variation is the rule rather than the exception in Tabanidae. Unfortunately this ideal can seldom be realised, and although basing descriptions of species on single specimens may lead to synonymies, at

this stage this is more desirable than to describe old material, or to wait while unique specimens of perhaps rare species may be undergoing inevitable deterioration.

My thanks are due to Mr. H. Oldroyd who has always been most helpful; to Mr. and Mrs. C. Jacot-Guillarmod, for valuable contributions of duplicates and rarities to the Natal Museum collection; to Dr. B. M. McIntosh of the Arbovirus Research Unit, Johannesburg, who has sent interesting material and kindly allowed me to keep duplicates; and to my husband for his help in the field. This study was done during the tenure of a bursary from the Council for Scientific and Industrial Research, for which I make grateful acknowledgement.

### Genus *Philoliche* Wiedemann

*Philoliche* Wiedemann, 1828, *Auss. Zweifl. Ins.* 1. p. 95; Bequaert, 1930, *Harvard Afr. Exped. Liberia* 36, p. 880; Oldroyd, 1957, *Horsetflies Ethiop. Reg.* 3, p. 319.

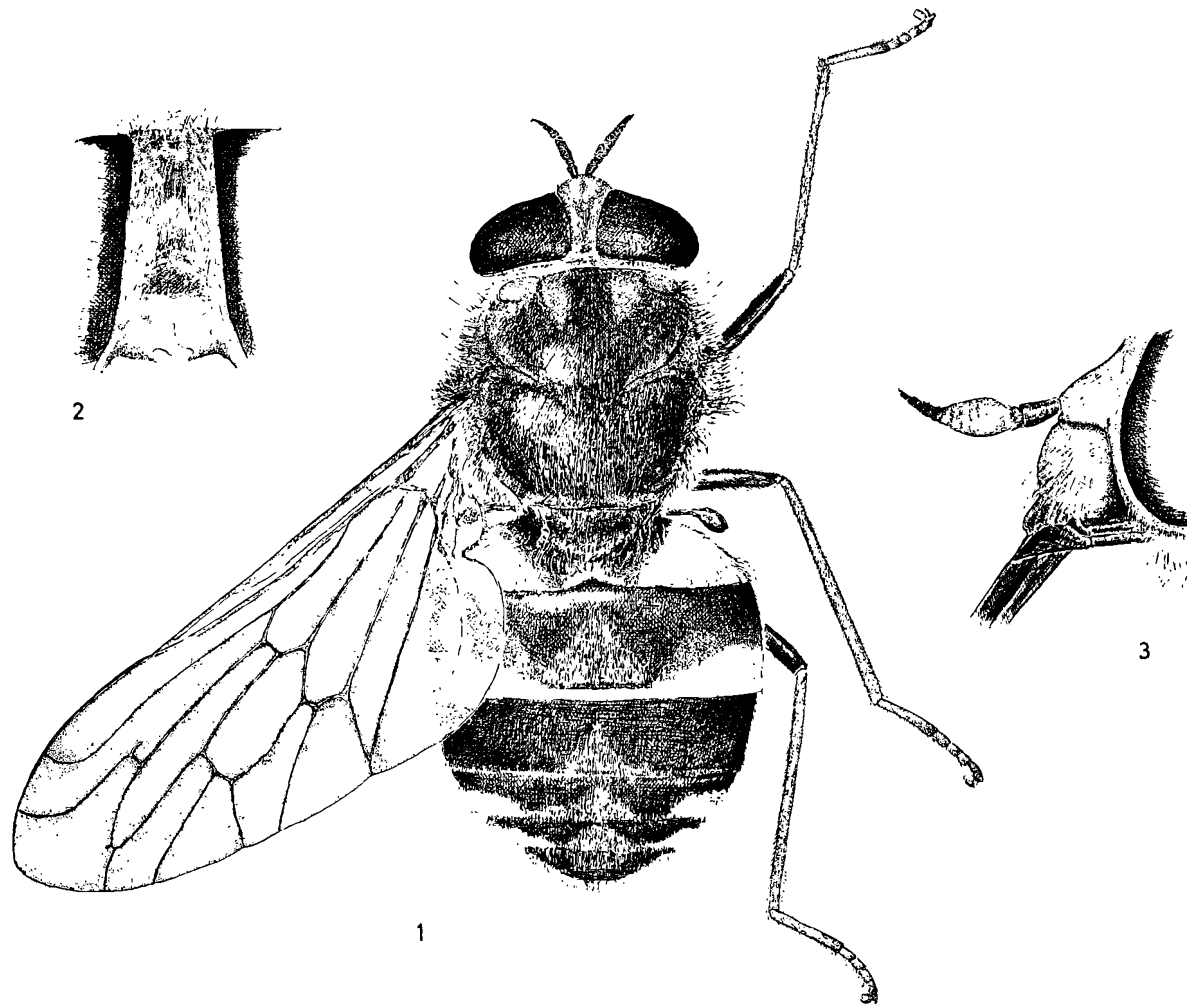
### *Philoliche* (*Ommatiosteres*) *nitida* n.sp.

On account of its distinctive wing venation this new species appears to be associated with the group of species centred about *angulata* Fabr. (Oldroyd, 1957, p.365, fig. 265). The other species are smaller, blacker flies, with fewer golden hairs on the head and thorax and less white tomentum on the first tergite. The wings of *nitida* are more brightly coloured than those of other species in the group, but less striking than in *elongata* and *lautissima*. In Oldroyd's (1957, p.365) key to the species of *Ommatiosteres*, *nitida* will not come out.

This is a spectacular, black and ginger-brown species. It has a rotund black abdomen, with the first tergite largely greyish-white, the second with a narrow, white hind margin broadening at the lateral angles, and the hind margins of tergites 4-6 with smaller lateral triangles. The wings are brighter ginger-brown basally, otherwise smoky with infuseated veins. The slightly divergent frons has a poorly defined callus.

♀ (Fig. 1).

*Head*: Eyes in dried specimen black, without hairs. Frons (fig. 2) slightly divergent, light reddish-brown in ground colour. Ocellar tubercle small, slightly raised, with what seems to be a rudimentary lateral ocellus on the one side. Tomentum gingery-golden, thickest around eye-margins and below callus area. Callus not clearly defined, with a median, untomented, smooth, elongate, approximately triangular area; lower callus slightly raised, thinly tomented, subrectangular. Frons with long, proclinate, brassy-golden hairs around callus, also a few along lower edge of lower callus; frons index 1:1.65. Subcallus protrubent, light reddish-brown in ground colour, with rather thin golden tomentum; face similarly coloured but tomentum rather more sparse, thickest laterally, completely lacking at lateral margins and above bases of palpi, hairs fine, fairly long, not numerous, pale golden. Proboscis moderately long,  $1\frac{1}{4}$  times vertical diameter of head, black. Buccae dark shining brown in ground colour with golden tomentum around eye margins; anterior buccae with a few short hairs, lower buccae with long, pale golden hairs. Palpi: first segment almost completely black, brownish terminally, hairs long, fine yellow and sparse basally, mostly short and black apically; second segment swollen basally, rugose, shading from dark



Figs. 1-3. *Philoliche (Ommatiosteres) nitida* n. sp. Holotype ♀, (1) dorsal view, (2) frons, (3) antenna and anterior part of head, lateral view.

reddish-brown basally to black at pointed apex, hairs short, thick and black. Postocular fringe long, pale golden on lower buccae, becoming shorter laterally and above eyes, but long with proclinate tips across vertex. Tomentum of occiput light ashy-grey with short, pale grey hairs. Antenna: (fig. 3) first segment broadened apically, reddish-brown with some very sparse, pale golden tomentum and a few short, black hairs; second segment narrow, red-brown with short, black apical hairs and some coppery ones below; third segment with slight dorsal angle, bright red-brown basally, darkening apically; terminal segments tapering and becoming darker progressively, black at apex.

*Thorax:* Mesonotum predominantly subshining black-brown with sparse ashy tomentum around lateral borders, in indistinct prescutellar crescents, on anterior vestiges of sublateral stripes, and along transverse suture, especially thick on humeral and notopleural lobes. Hairs fairly numerous, moderately long, semi-recumbent, fine, mostly golden but some longer, fine, yellowish-grey hairs on anterior part of mesonotum. On lateral borders hairs thicker, longer and of a deeper gingery-golden colour. Pleura black, subshining, sterno- and ptero-pleura with some fine, greyish-yellow tomentum. Hairs long, mostly golden-yellow, meta- and hypo-pleura with very few hairs, those along upper and posterior margins of mesopleuron especially long and more gingery-golden in colour. Scutellum subshining, black-brown with long, golden hairs.

*Legs:* Fore coxae swollen, black, shining with long, golden hairs; mid and hind coxae with pale yellowish-grey tomentum and with both short black and brassy golden hairs. Femora black, narrowly reddish at apex, with mostly short black hairs and some coppery hairs along lower margin. Tibiae light reddish-yellow, hairs short, fine and coppery-golden; spurs on mid and hind tibiae dark reddish-brown. Tarsi also light reddish-brown, only slightly darkened apically, apical segment almost wholly dark brown. Claws reddish basally, elsewhere black, pulvilli light brown.

*Wings:* Bright orange-brown basally and along costal margin, costal and subcostal cells noticably ginger. Membrane elsewhere smoky-brown, colour more concentrated along veins. Veins orange-brown basally, dark in smoky areas.  $R_4$  with long appendix,  $R_5$  fused with M, angled, with stump vein, as in *angulata* group. Haltere blackish-brown, slightly paler and browner dorsally on knob.

*Abdomen:* Rotund, predominantly shining black, with pearly-white markings and shining white hairs. First tergite black beneath scutellum, edged with bright red-brown, elsewhere pearly-white which occupies extensive lateral areas and narrow but continuous band across median portion of hind margin; hairs short, mostly black on dark areas, otherwise short, golden. Second tergite black with diffuse red-brown patches sublaterally, and pearly-white tomentum along hind margin, narrow medially, expanded laterally into conspicuous, elongate patches; hairs a beautiful "spun glass" shining-white on white areas, short and coppery-golden in median triangular patch which is altogether without tomentum, also coppery-golden hairs on sublateral reddish patches and transversely above whole length of white hind margin, elsewhere short and black. Third tergite black with black hairs except for some sparse coppery-golden ones in area of median triangle and in fringe medially on hind margin; lateral quarter of hind margin with black hairs. Fourth tergite black with pearly-white tomentum and shining white hairs in posterior lateral

angles, not forming a continuous band along hind margin; hairs shining coppery-white in median triangle and along hind margin to white patches, also in narrow border above white patches, especially thick on lateral border. Fifth and sixth tergites with basically the same pattern and colour as fourth, but white lateral angles progressively smaller, also more gingery-golden hairs laterally and a few amongst the black hairs. Seventh tergite black with predominantly coppery hairs, especially in fringe on hind margin and in lateral tufts. Terminalia red-brown with coppery hairs. Sternites black with short, black hairs, except first sternite which is dark red-brown basally with a broad, even band of pearly-white tomentum across posterior third, and has laterally mostly short, black hairs, medially black hairs mixed with yellowish-orange ones, on black areas, on white areas white hairs laterally and gingery-golden ones medially. Remaining sternites black, with mostly black hairs, but proportion of gingery hairs becoming progressively greater towards terminal segment.

*Measurements:* Length without antennae, 15.0 mm. Wing, 17.0 mm.

*Holotype:* ♀, Elandsrivier area, south of Cockscomb Mountain, Patensie District, Eastern Cape Province, 2 December, 1967 (coll. B. R. Stuckenberg). In the Natal Museum (type No. 1161).

*Notes:* The specimen was caught on the summit of one of the foothills of the Cockscomb Mountain, on a bright, clear, warm midmorning. Members of this species were observed, along with two other tabanid species, attacking a herd of cattle. The veld in that region is low with macchia with *Protea* bushes, and can support few cattle; as few buck remain in the area this species cannot be common, in fact its existence may be assumed to be precarious.

#### ***Philoliche (Phara) turpis* n.sp.**

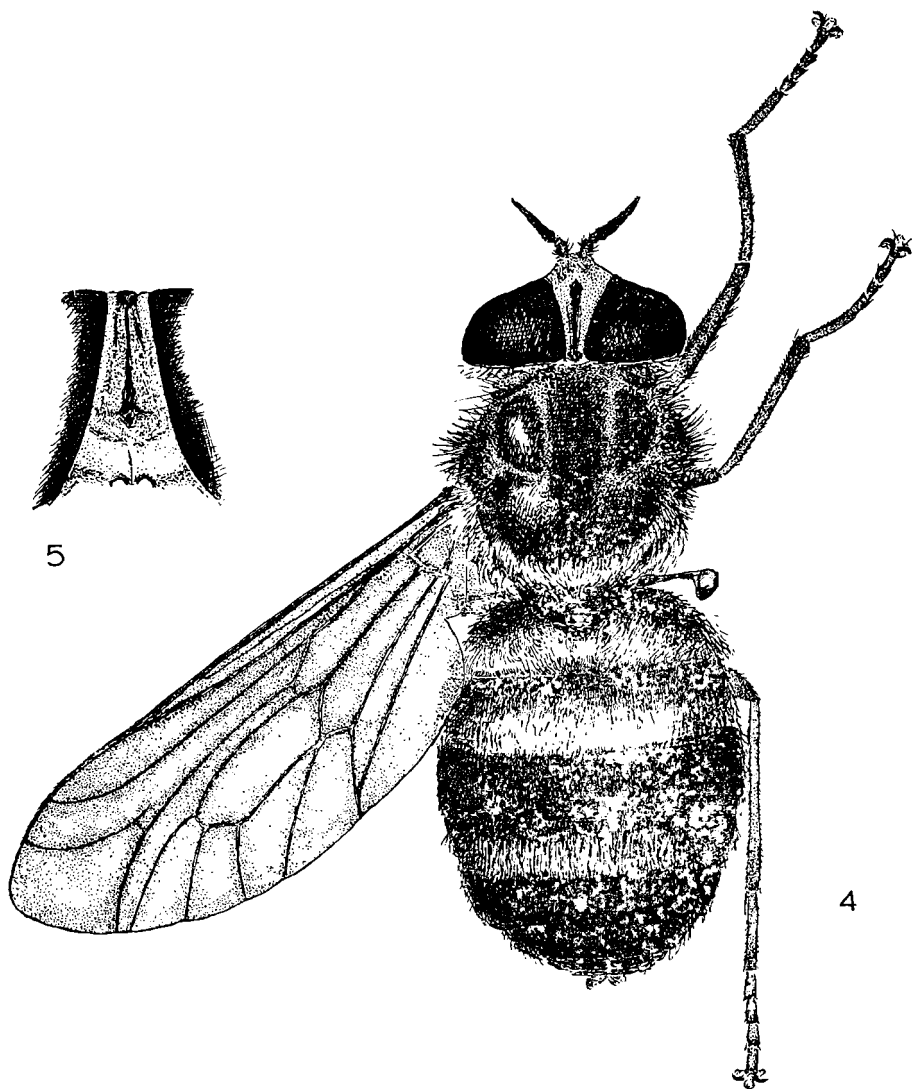
Unlike many of the species of the subgenus *Phara* Walker (Oldroyd, 1957, p.411) which are black with brassy-golden hairs, this rather small species is black with shining yellowish-white hairs (almost a platinum blonde). The wings are obscurely smoky around the posterior margin, the veins mostly are reddish-basally, becoming dark towards the wing margin, and there is an infuscation along the veins which is especially noticeable towards the anterior margin. The lateral thoracic tufts and prescutellar fringe are pale, shining yellowish-white, and there are inconspicuous greyish sublateral stripes. The black abdomen has pale, shining, yellowish-white hairs on the first, second and fourth tergites. The frons is mostly covered by silvery tomentum, and has a median, shining-brown, longitudinally-cleft ridge; the face is dark mahogany-brown and shining, and the palpi are black with thick, black hairs. The pale, pellucid, yellowish tibiae have reddish-brown tips.

In Oldroyd's (*op. cit.*, p. 412) key to the species of *Phara* this species runs down to *bivirgulata* Austen on account of the middle and hind tibiae being mostly whitish with reddish tips. Apart from not being as brightly coloured as *bivirgulata*, *turpis* is easily distinguished by having black palpi with black hairs and not yellowish-orange palpi with orange hairs as in the former species; also, the mesonotal stripes are greyish and not nearly as definite as the brown stripes of *bivirgulata*. The abdominal patterns are also different; *turpis* has no median triangles of pale hairs on the tergites. The wing markings of *turpis* are not as clearly defined as in *bivirgulata*. Nevertheless, *turpis* is more similar to

that species in size, shape and general appearance, than to any other *Phara* I have seen.

♀ (Fig. 4).

**Head:** Eyes bare, black in dried specimen. Frons (fig. 5) narrow at vertex, diverging towards antennae. Ocellar tubercle square, dark red-brown, slightly raised, ocelli minute and clearly non-functional. Beneath ocellar tubercle is a median, elongate, raised, very dark brown, longitudinally-grooved ridge, and short, bare, raised, lateral ridges as well. Sparse, short, black hairs give area around callus a roughened appearance. Tomentum of frons and



Figs. 4-5. *Philoliche (Phara) turpis* n. sp. Holotype ♀, (4) dorsal view, (5) frons.

most of subcallus smooth, glistening, silvery-grey tinged with pinkish-brown. Subcallus with a median, brown cleft, separated from frons by a down-curved, transverse impression. Tomentum of lower subcallus brown and thinner with brown ground colour shining through, antennal bases narrowly surrounded by brown tomentum. Parafacials narrow, covered with silver-bronze tomentum ( the exact colour depends on the angle of lighting), thin on lower surface with ground colour shining through. On lower parafacials hairs short, black, becoming longer towards buccae. Buccae with mahogany ground colour shining through thin bronze tomentum, hairs long and black, but thick and parchment-white further beneath head. Around outer eye margins tomentum shading from yellowish to glistening white from

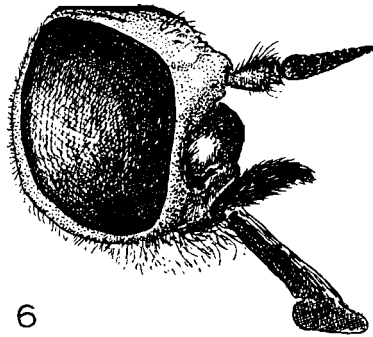


Fig. 6. *Philoliche (Phara) turpis* n. sp. Holotype ♀, head in lateral view.

lateral eye angles to vertex. Vertical fringe short, black, close to eyes margin, yellowish-white further back; lateral occipital fringe longer, mostly yellow but some black. Face (fig. 6) dark, shining mahogany without tomentum, bulging and short in profile. Palpi black with black hairs which are fine on first segment and shorter and thicker on second. Proboscis and labellum matt black.

**Thorax:** Mesonotum black-brown in ground colour with short sub-lateral stripes of yellowish-white tomentum, broad anteriorly but tapering and then disappearing just anterior to transverse suture. Thin yellow-white tomentum covers humeral, notopleural and postalar lobes, and a prescutellar band, in fact, with the exception of the supra alar area which is black, the mesonotum has a continuous pale lateral and posterior border. Hairs, yellowish white and sparse just behind head, thick on whitish areas, bristly, long and black on supra-alar area, short and nearly erect over remainder of mesonotum. Pleura dark, black-brown, with almost entirely black hairs, but some wispy, pale, yellowish-white ones on ptero- and meta-pleura, and upper posterior sternopleuron, and longer thicker pale ones on the propleuron.

**Legs:** Coxae very dark, black-brown; fore coxae short, thick, semi-globular in anterior view, flattened and thin around edges, hairs mostly black, but with many long fine pale ones on anterior face of fore coxae, and short, more brassy ones distally on hind coxae. Femora dark mahogany-brown. Fore femora with mainly black hairs, short and coppery on inner surface and around distal joints. On middle femora short coppery hairs on inner surface and

at distal joints, other hairs black. Hairs on hind femora mostly short and coppery, some longer black ones basally. Fore tibiae almost entirely reddish-brown, paler basally; mid and hind tibiae pale pellucid, yellow-brown basally with reddish-brown tips, hairs concolorous. Tarsi reddish-brown with mostly reddish-brown hairs but coppery ones below. Pulvilli orange-brown, claws black.

*Wings:* Colouring diffuse, not forming clear pattern. Membrane orange basally and along fore margin to stigmal area, smoky at tip and around hind margin, veins orange basally darkening to black-brown in smoky area. Membrane colour concentrated most intensely narrowly along veins. Radial veins most strongly infuscated.  $M_1$  is a dark vein with smoky infuscation, which runs right through the orange area. Stigma undifferentiated. Costal and subcostal cells are a uniform and rather darker orange. Basal part of  $M_4$ , linking m-cu with  $M_3$ , has disappeared, resulting on both the fourth posterior and the second basal cells being pointed. This is identical on both wings. In other related species in the Natal Museum collection, all stages of the disappearance of the vein are represented, but in none is it so far advanced as in this specimen. The possibility that the specimen is aberrant cannot be ignored. Squamae pale orange-brown. Halteres, stalk and knob, dark blackish-brown, slightly paler beneath.

*Abdomen:* Very dark, black in ground colour. Dorsally, first tergite with fine brownish pruinescence, and hairs almost entirely shining whitish, black ones on anterior lateral angles only. The extent of the pale hairs is most easily determined with vertical illumination. Second tergite also with pale hairs, shorter and more coppery anteriorly, longer and paler posteriorly. Third with black hairs. Fourth with some black hairs anteriorly, shining pale hairs medially and in a wide band on posterior half of tergite. Remaining tergites with flattened, thin, brown lateral edges, hairs black. Venter with silvery, shining pruinescence on first sternite. Second, third and fourth sternites with pale shining hairs, but fourth has some black hairs medially on anterior border. Fifth, sixth and seventh have coppery hairs with progressively more dark hairs anteriorly. Ultimate segment has mostly black hairs.

*Measurements:* Length without antennae, 14.5 mm. Wing length 12 m.m

*Holotype* ♀, Natures Valley, east of Plettenberg Bay, Tsitsikama area, Eastern Cape Province, 28th December, 1966 (coll. A. Jacot-Guillarmod). Kindly donated by Mr. C. Jacot-Guillarmod to the Natal Museum (type No. 1162).

### Genus *Chrysops* Meigen

*Chrysops* Meigen, 1803, *Illig. Mag. f. Ins.* 2, p. 267.

### *Chrysops calida* Walker

*Chrysops calida* Walker, 1848. *List Dip. Brit. Mus.* 1, p. 304. Oldroyd, 1957, *Horseflies Ethiop. Reg.* 3, p. 70

On account of the condition of available specimens, the description given by Oldroyd (1957: 80) of this species is both brief and incomplete. He writes: "This is known to me only from the original pair of specimens, which are now so broken that it is not worth attempting a detailed description." In the Natal Museum are two males which come out without difficulty as *calida* in Oldroyd's (1957: 58) key to the *Chrysops woodi* group. The



key character given is the breadth of the median abdominal stripe, which easily separates the specimens from *C. austeni* Neave. One specimen is greasy and very dusty, but the other is in good condition.

Unfortunately *austeni* is represented only by females in the collection of the Natal Museum. These are longer and more slender than the males of *calida*, probably a sexual difference. The colouring and pattern are different, *austeni* having more definite, clear and bright thoracic stripes, a much narrower median abdominal stripe and more definitely marked wings. As the two specimens of *calida* were caught in 1903 and 1926, fresh specimens may be brighter with black markings rather than dark brown.

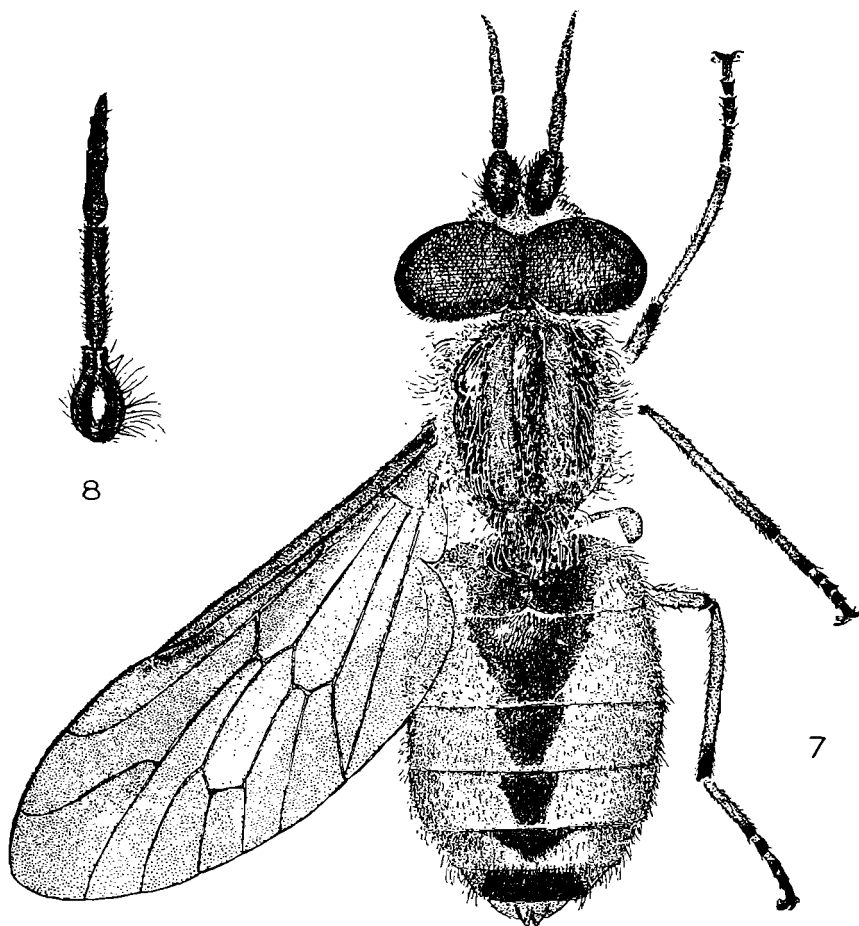
This is a fairly small, golden-yellow and black *Chrysops* (fig. 7). The antennae are dark, the first segment is short and bulbous, but constricted before the apex, and the third segment is almost dumbbell-shaped. The wings are yellow centrally surrounded by smoky brown, but the marking is not very sharply defined. The legs are strikingly coloured, yellow with narrowly black joints. The median abdominal stripe is broad basally, tapering gradually and then becoming broader again just before the apex. The yellow parts, especially those of the head, are translucent, and the muscle attachments are visible through the sclerites. ♂ (Fig. 7).

**Head:** Eyes meeting for part of the length of inner margins, separated at lower edges by narrow triangle of black frons, divided into larger, paler, greenish-grey ommatidia above and smaller dark ones below. Ocellar tubercle large, black, with pale grey ocelli, and long, upstanding, brassy-golden hairs curving at tips. Subcallus pale yellow, tomentum thin, whitish-yellow. Upper parafacials with only a little yellow tomentum in upper corners and along eye margins, otherwise clear, shining pale yellow, untomented, with irregular, very dark brown shining patches above tentorial pits. In upper angles of parafacials is a crescent of long golden-yellow hairs, and along eye margins is a line of shorter yellow hairs. Fairly dense, medium long, inclinate yellow hairs cover yellow-tomented lower parafacials and buccae. Face mostly pale, shining yellow, with only a little tomentum at lower edges of head and thin powdering of white tomentum above proboscis base. Hairs medium-long, yellow, beneath and around tentorial pits and at lower edges of face. Proboscis slender, black. Antennae (fig. 8): first segment bulbous, but constricted with narrower region before apex; shining red-brown, nearly black with small, yellow-brown dorsal patches at base; hairs long, light yellow-brown basally becoming shorter and black apically. Second segment as long as first, narrow, dark brown, subshining through some thin grey tomentum; hairs short, thick and black. Third segment with slight constriction close to base and then definitely constricted medially (almost dumbbell-shaped); dull, dark, blackish-brown with rich, dark, velvety-brown pruinescence. Terminal segments tapering black-brown with same brown pruinescence. Palpi: slightly swollen, bulbous and pale yellow. First segment upcurving and rather long, with short yellow hairs. Second segment small, short, swollen, curved at tip; hairs short, pale, becoming long, pale on upper surfaces, with an occasional shorter, thicker dark hair and a few dark ones at tip of segment.

**Thorax:** Mesonotum shiny black with dusty greyish-yellow tomentum in fairly broad sublateral stripes running from anterior to posterior borders. Lateral borders broadly tomented, dusty golden-yellow. Hairs long, golden-yellow, longer, thicker and more

brassy on lateral borders; on pronotum is a longer, paler upcurved tuft. Pleura with dark ground colour, thin yellow tomentum, and long golden-yellow hairs especially thick on upper parts of pleurites.

*Legs:* Fore coxae pale yellow, shining except at base where there is a little whitish-yellow tomentum, apices narrowly shining, dark mahogany; hairs long, fine, sparse, pale yellow. Mid coxae yellow with dark mahogany apices, and sparse, fine, yellow hairs. Hind coxae dark in ground colour with yellow tomentum, like pleura, a little yellowish basally and black apically, with sparse, long, fine yellow hairs; femora shining orange-yellow, dark mahogany (almost black) both basally and apically; apical quarter of fore femora darkened, mid and hind femora only narrowly darkened apically. Hairs pale yellow, long and sparse on yellow areas, shorter, thicker and black on dark areas. Tibiae yellow, all darkened apically and basally. Fore tibia becoming darker about mid-way along its



Figs. 7-8. *Chrysops calida* Walker. ♂, (7) dorsal view, (8) antenna, lateral view.

length, shading to black and thickened apically, hairs mostly short black with some short pale hairs basally. Mid tibia more narrowly darkened apically, with black hairs apically, pale hairs extensively basally, medially hairs mixed. Hind tibia slightly darker, overall and darkened apex more extensive than second, hairs pale basally, dark apically, mixed centrally. Fore tarsi black, brownish below; hairs short, black, claws black, pads dark brown. Second and third tarsal segments yellow-brown basally, black apically, black apices becoming more extensive and terminal segment almost entirely black; hairs short, and black mostly, but coppered beneath; claws black, pads dark brown.

*Wings:* Markings (fig. 7) not very clearly defined. Wing yellow-brown centrally, surrounding membrane smoky-brown, darkest along leading edge of wing, subcostal cell very dark. Alula yellow, squamae slightly more brownish. Veins dark in areas, becoming yellow in light areas, subcosta very dark, almost black. Haltere knob pale yellow, stalk brownish.

*Abdomen:* Dorsum golden-yellow, with dark brown to black median stripe. First tergite only yellow in lateral triangles; median patch broad, tapering slightly posteriorly, dark brown deepening to black medially. Second tergite more extensively yellow laterally, median mark continuous with that of first tergite, tapering more steeply towards posterior border, dark brown deepening to black medially. Third tergite with black triangle not exactly continuous with mark on second tergite, tapering posteriorly, not quite meeting pale yellow hind margin. Mark on fourth tergite subtriangular, narrower, black. Fifth tergite with broader but shallow black triangle. Sixth tergite almost entirely black, only narrowly pale laterally. Terminalia brownish-yellow. Hairs yellow on light areas, especially long and brassy on lateral borders, short, thick and black on dark areas. The shape of the dark markings are not exactly the same on both specimens, but the differences are minor; the arrangement of posteriorly tapered triangles is the same, these becoming narrow progressively on first to fourth tergites then broadening abruptly on next two tergites, mark on sixth broadest on hind margin as opposed to all other markings. Sternites yellow, becoming progressively more orange posteriorly, metapleural epimeron dull greyish-brown. Hairs brassy yellow, some longish and subject, others shorter and reclinate.

*Measurements:* The older specimens is slightly more extended, and very slightly smaller; without antennae 8.0 mm., with antennae 10 mm., wings 7 mm. The 1926 specimen, 8.5 mm. without antennae, 10.5 mm. with antennae, wings 7.2 mm.

*Localities:* 1 ♂, Miss M. Daly & Miss Sole, Grahamstown, 1-03. 1 ♂, Howieson's Poort, J. Hewitt, 16th October, 1926.

*Notes:* Possibly this species is extinct, but it may exist in some area either remote or overlooked by entomologists. The specimens in the British Museum are without precise locality labels. The two specimens in the Natal Museum are labelled respectively Grahams-town, and Howieson's Poort, which is about 5 miles from Grahamstown. Much of the natural vegetation there has been disturbed and it is probable that this species must be rare or now extinct in these localities.

Genus *Cydistomyia* TaylorSubgenus *Amanella* Oldroyd

*Amanella* Oldroyd, 1954, *Horseflies Ethiop. Reg.* 2, p. 75.

*Cydistomyia (Amanella) ignota* Usher

*Cydistomyia (Amanella) ignota* Usher, 1965, *Ann. Natal Mus.* 18 (1): 77.

When describing this species I wrote: "it would be well to bear in mind that a fresh specimen may be darker," and also, "the colour described here may not agree with that of fresh material" (Usher, 1965, p.77). Nevertheless when Dr. McIntosh sent me two small dark, almost patternless flies, I at first believed them to belong to a new species of *Amanella*. Luckily Dr. McIntosh had taken considerable trouble to explain the exact locality of capture, and it was this and not the appearance of the flies which resulted in their identification as *ignota*. The effect of fading is so deceptive that, although the calli, palpi and antennae are identical in shape, the general appearance is completely different. The holotype may be teneral in comparison with the two new specimens; it appears to have been slightly flattened and the head is a little distorted.

Macroscopically and superficially the new specimens of *ignota* resemble *imbecilla* (Karsch), (definitely not *pondo* with which I previously compared it), but they have small median triangles on the tergites similar to those of *emergens* Oldroyd. Microscopic examination reveals the basic pattern and clouded wings of the *medialis* group. The colour of the wings of the holotype has faded, no clouding being visible.

In Oldroyd's (1954, p.75) key, *ignota* comes out as *amblychroma* (Speiser). The only specimen of *amblychroma* in my possession is a darker, blacker fly, with less clouding in the wings and more clearly defined, broader white hind margins, as well as numerous differences in microscopic detail.

♀♀ (Fig. 9)

*Head:* Eyes brown in dried specimen, hairs short and sparse. Frons (Fig. 12) parallel-sided, ratio 3:1. Ocellar spot yellow-brown, raised ocelli clearly non-functional. Tomentum pale grey-brown and dark-brown: dark-brown in a patch near apex of upper callus or extending from base of upper callus to ocellar tubercle, leaving grey patches between tip of callus and ocellar tubercle lateral to tubercle and around upper edge of lower callus. Calli light brownish-yellow or reddish-brown, lower callus almost square, not quite reaching eye margins, upper callus elongate lanceolate (see fig. 12). Hairs recumbent, short, thick, dark, not numerous. Subcallus (fig. 10) swollen, shining, pale brownish-yellow with central, darker reddish line, shallowly indented, with very thin, greyish tomentum. There are a few dark hairs above each antennal base. Face with whitish-grey tomentum, faintly and indefinitely yellowish tinged and smudged with cinnamon, especially below antennae. Hairs rather long, dark, not very numerous, pale at lower edges. On parafacials and buccae tomentum mostly whitish-grey, dark brown in narrow strip beneath eyes and indistinctly tinged with cinnamon in one specimen. The smaller specimen has considerably more reddish colouring in the tomentum of face and parafacials. Hairs mostly rather long,

sparse, dark, but long and pale on lower buccae beneath territorial pits and along lower margins of head. Palpi: (fig. 11) first segment small, yellow-brown with ashy tomentum, hairs long, fine, pale brown at base becoming shorter, thick and black apically. Second segment almost as long as proboscis, slender, pointed, without a groove, brownish-yellow or light orange-brown with ashy tomentum; hairs fairly long, thick, black, not numerous. Proboscis short, velvety black. Antennae: (fig. 10) first segment sub-triangular, yellow-brown, sub-shining with some thin ashy tomentum, fairly numerous, medium long, thick black hairs. Second segment very much smaller, narrow, orange-brown, darker apically,

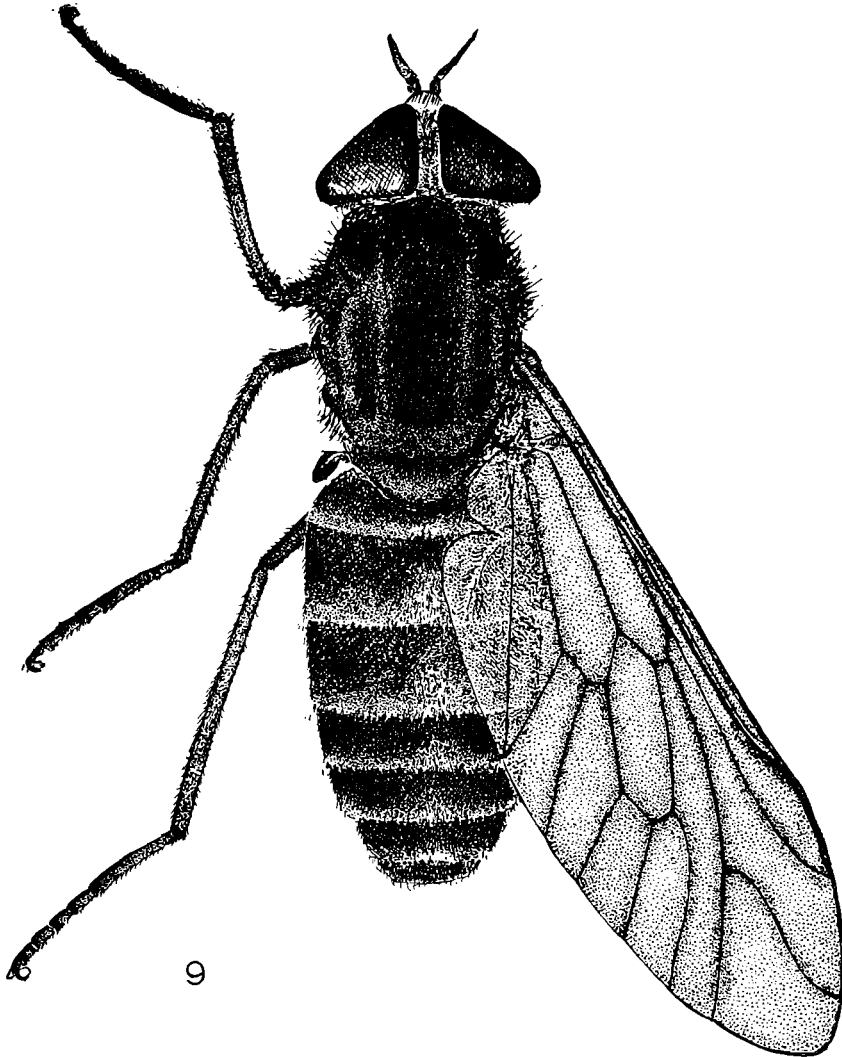


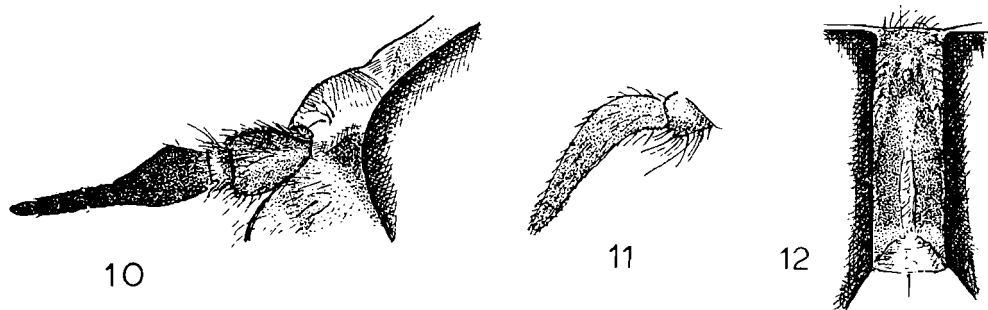
Fig. 9. *Cydistomyia (Amanella) ignota* Usher. ♀, dorsal view.

with ashy tomentum and short black hairs. Third segment dark orange-brown or clear brownish-orange basally, becoming obscurely blackened anteriorly. Terminal segments velvety black.

**Thorax:** Mesonotum black in ground colour, with yellowish markings. Lateral stripes broad with some diffuse darkening on supra-alar lobes. sub-laterals narrow, fading anterior of the transverse suture, hind border of mesonotum broadly yellow. The specimens are greasy and may also be rubbed; they show only a little greyish tomentum anteriorly but a fresh specimen may well have very much more of a pattern of tomentum. Hairs short, not very numerous, semi-recumbent, coppery-brown and black, some longer pale ones above wing bases and a rather sparse tuft of bristly black hairs on notopleural lobe. Hairs on prosternum long, fine shining, pale. Scutellum diffusely darkened anteriorly, broadly yellow-brown around outer border, thin grey tomentum in these specimens only anteriorly. Pleura yellow-brown with indefinite black patches on lower areas of meso-, ptero-, sterno- and hypo-pleuron. Thin whitish-grey tomentum visible in many places but both specimens are greasy. Hairs long, fine, pale, rather sparse, notably more numerous in tufts on upper parts of pleura and especially long on pro- and meta-pleura.

**Legs:** Fore coxae greyish-brown, darkened at apices, with long pale hairs basally and shorter black ones anteriorly. Mid and hind coxae like pleura, but less greasy therefore appearing greyer on account of the presence of more thin, grey tomentum. Femora dark yellow-brown; anterior femora darkest, somewhat blackish. Tibiae similar but paler. Fore tarsi darkest, sooty brown basally shading to black apically; mid and hind tarsi brown with black apices to segments and terminal segment black. Hairs on underside of fore tarsi black, on mid and hind tarsi bright, shining copper.

**Abdomen:** Tergites dark yellow-brown or sepia becoming yellower towards hind margins. Whitish, small, shallow, lateral and medium-large but not prominent median, triangles present on each hind margin. Hairs black on dark areas, shining pale yellow on light triangles and along hind margins, especially long, pale, silvery hairs in tuft at each lateral angle. Sternites yellow-brown, indistinctly smudged with grey, darkened towards hind margins, last two segments almost black medially. Hind margins lighter, brownish yellow. Short, recumbent, black hairs predominate, pale yellow, shining, recumbent hairs on



Figs. 10-12. *Cydistomyia (Amanella) ignota* Usher. ♀, (10) antenna and subcallus, lateral view, (11) palp, (12) frons.

hind margins. On penultimate sternite, there are some long thick black hairs, and many of these long hairs, erect and semi-erect, on ultimate segment.

*Wings:* Smoky, sepia-stained along dark brown veins with clouding at cross-veins. Stigma dark-brown.  $R_4$  without appendix. Squamae parchment-like with fine sepia border. Haltere, stalk and rim yellowish-brown, faces of knob dark sepia brown.

*Measurements:* Length 12 mm. Wings 10 mm. (Larger specimen).

*Material examined:* 2 ♀♀, Woodbush, near Tzaneen, Eastern Transvaal, 14-15 December 1965 (coll. B. M. McIntosh). One specimen in Institute for Medical Research, Johannesburg, the other in Natal Museum.

*Notes:* The larger specimen came from a high forest in the vicinity of the source of the Broederstroom River, and the smaller specimen from the camp site just below the D.A.P. Naude Dam on the Broederstroom. The holotype comes from Haenertsburg, which is close to the Broederstroom. The larger specimen shows some minor differences from the holotype in colour and shape of the calli. The abdomen of the smaller one is slightly flattened, which may explain why the whitish triangles are more conspicuous. The colour of the two fresh specimens is quite unlike that of the holotype. Obviously colour is not a reliable character on which to base a description, but species of this genus are not readily distinguishable morphologically.

#### Genus *Limata* Oldroyd

*Limata* Oldroyd, 1954, *Horseflies Ethiop. Reg.* 2, p. 67.

#### *Limata miranda* n.sp.

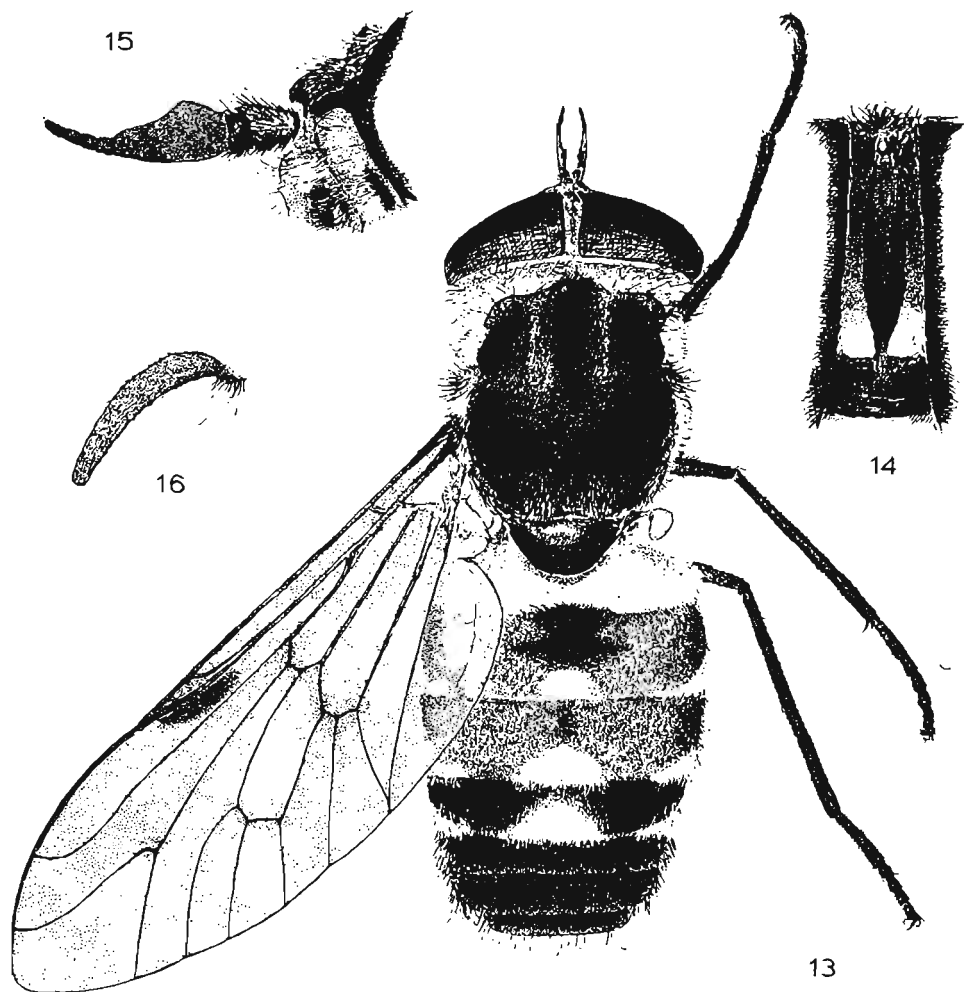
This handsome fly is the most spectacular of the known *Limata* species. It will not fit in Oldroyd's (1954, p.68) key to the females. The frons is narrow, but the presence of tomentum as well as the striking colouring and pattern of the abdomen separates this species from *facialis* Oldroyd. From *parafacialis* Oldroyd, which occurs in Grahamstown not far from Hogsback, *miranda* differs in being a larger, more colourful fly. The shape of *miranda* is more like that of *tenuicornis* (Macquart) or *capensis* (Wiedemann) but its appearance is quite different, being less shiny and with the first tergite white and the next two bright brown instead of all the tergites being black or black-brown.

This is brightly coloured, black, white and brown *Limata*, medium-sized with long wings and infuscated cross-veins. It is a beautiful, strikingly patterned species. The jet-black thorax, semi-matt in appearance, contrasts with the long white hairs of the pleura which form a white lateral fringe in dorsal aspect. No other known *Limata* has a similar abdominal pattern, the first tergite white, the second and third brown and the remainder pitch-black, with small, bright, pearly-white median and lateral triangles on tergites 2, 3 and 4. The legs are uniformly black. The antennae and palpi are charcoal grey, the parafacials are somewhat swollen with a bare shining patch (on each parafacial) midway along the eye margin between the frontal and buccal eye angles, and shining patches around the tentorial pits.

Following the description of the holotype female is one of a male which is probably of the same species though it was collected hundreds of miles distant from the type locality.

♀ (Fig. 13).

**Head:** Eyes rusty-black in dried specimen with pale, yellowish-white hairs, forming a conspicuous shining pile in profile. Frons (fig. 14) divergent, (8:11), frons index 6. Lower callus approximately quadrangular, meeting eye margins laterally, upper margin concave on each side of junction with upper callus, dark black-brown, transversely wrinkled and sub-shining, some shining pale and dark hairs along eye margins. Upper callus slightly raised, lanceolate, extending from narrow connection with lower callus to small, raised ocellar tubercle. Hairs of frons predominantly dark, some coppery, a few pale, all shining and many curved at tips. Ocellar tubercle very dark brown with three pale, greyish, clearly



Figs. 13-16. *Limata miranda* n. sp. Holotype ♀, (13) dorsal view, (14) frons, (15) antenna, subcallus, upper face and parafacial, in lateral view, (16) palp.



non-functional ocelli. Tomentum of frons whitish-grey above lower callus, shading to brown and then very dark brown, becoming progressively more sparse dorsally. Upper part of frons sub-shining, very dark brown, upper callus distinguishable only because it is raised. At vertex above ocellar tubercle there is an almost square area of dense black, with a tuft of thick, long, stiff, black hairs. Hairs on dark area below shorter, mostly curling, dark and shining, some pale, but on grey tomentum hairs both short and black, and longer, finer and silvery. Subcallus protuberant in profile, shining, dark mahogany-brown, with some shining, pale, proclinate hairs, mostly laterally. Parafacials slightly swollen, with grey tomentum shading to charcoal on lower buccae. Bare, sub-oval, shining brown patch on each parafacial about midway along its length. Hairs long, pale silvery-yellow on parafacials, becoming longer and dull brown on buccae. Face with light grey tomentum beneath antennae shading to charcoal ventrally, with yellow ground colour showing through above palpi, facial side of tentorial pits shining brown and bare; hairs mostly long, fine, dull brown, but some on upper part of face and around tentorial pits are pale. Antennae (fig. 15): first segments almost cylindrical, only slightly broader distally, dark charcoal-grey with mostly stiff, dark, moderately long hairs, and a few pale ones. Second segment small, narrow, subshining dark grey dorsally, black ventrally, with short, stiff, dark brown hairs. Third segment with distinct dorsal angle, uniform, matt charcoal-grey, as are terminal segments, all with shining silvery-yellow pruinescence. Palpi (fig. 16): first segment subshining dark grey with mostly long pale hairs, and some shorter, stiffer, black ones towards apex. Second segment not quite reaching tip of proboscis, banana-shaped, tomentum a little whitish basally, otherwise dark grey, with a few long pale hairs basally, the other hairs being black, short and recumbent. Palpal groove absent. Proboscis velvety-black with short, sparse, shining dark hairs across distal end of labellum.

*Thorax:* Mesonotum sooty, subshining black, slightly brownish in certain lights, with short, fine, grey sublateral stripes ending at transverse suture in a small round spot situated in a circular depression; the stripes are of whitish-grey tomentum and short, white hairs. Sublaterally on hind margin of the mesonotum are two indistinct patches of white hairs which seem to be posterior traces of sublateral stripes. Hairs otherwise short, reclinate, black. Laterally there is a conspicuous white border of hairs; these are on the pleura and the humeral notopleural and post-alar lobes. On lower part of notopleural lobe is a conspicuous tuft of long, thick, upward curving, pitch-black hairs. Pleura charcoal-grey with long, fine, white hairs, most numerous on upper parts, especially long and dense on propleuron and upper part of mesopleuron, and in long upward- and forward-curving tufts on metapleuron. Scutellum black, sub-shining, with short, black hairs, and short, white ones in lateral corner.

*Legs:* Fore coxae with tomentum ashy basally darkening to charcoal-grey, hairs long, fine, white; only at apices and along inner surface are there shorter black hairs. Mid and hind coxae black, subshining with thin, dark grey tomentum, and long, shining, white hairs. Legs otherwise black with black hairs, except for fringe of long, fine, shining, white hairs on proximal  $\frac{3}{4}$  of hind angle of mid femur (remainder of fringe black, becoming progressively shorter towards apex) and dark copper hairs beneath mid and hind tarsi. There

are also a few scattered, long, pale hairs on underside of hind femur. Pads on apices of tarsi inconspicuous, mustard yellow.

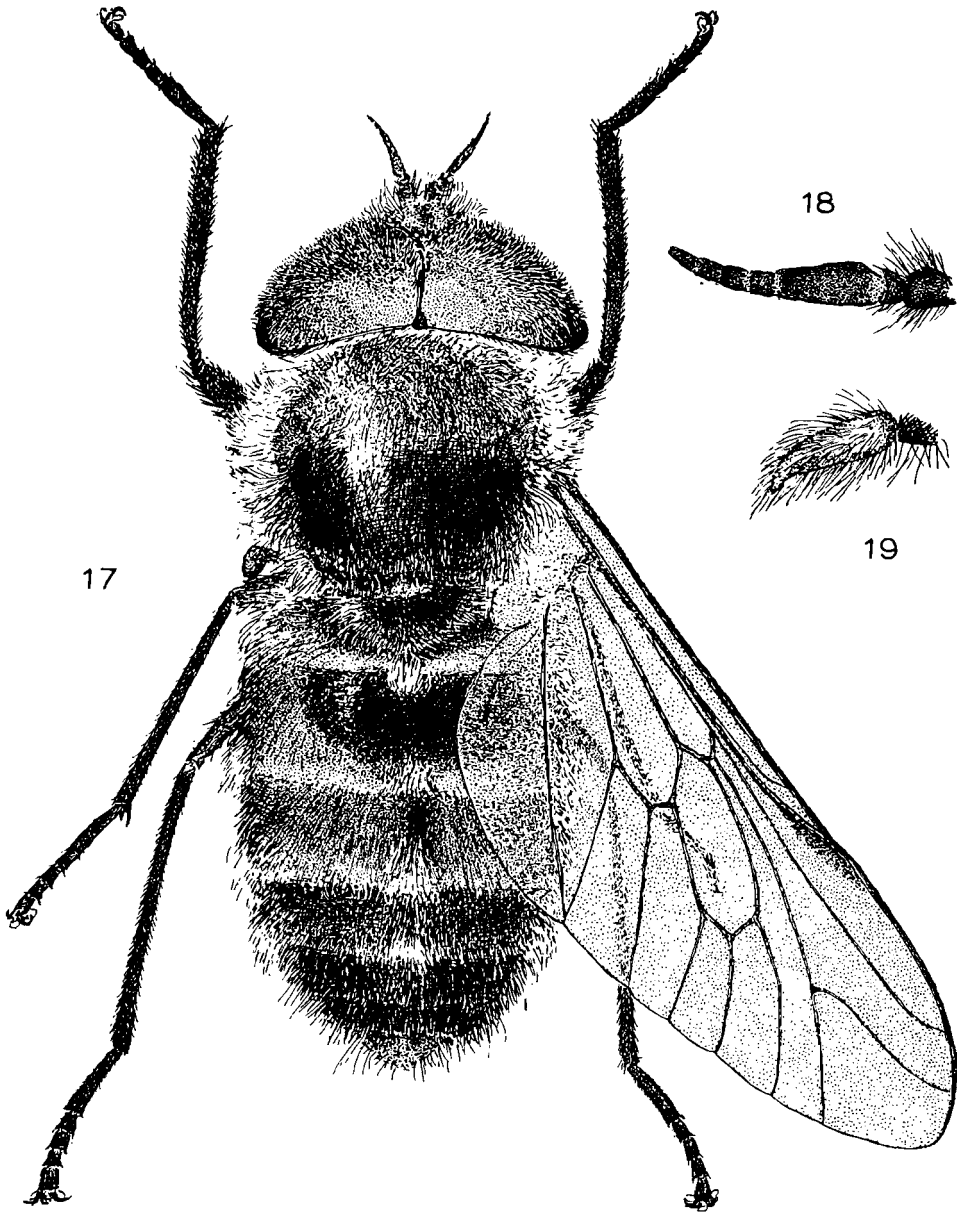
*Wings:* Membrane slightly smoky. Veins very dark sepia brown apically, becoming paler and then yellow basally, except costa which is very dark and fork of  $R_4^{+5}$ , at distal ends of both basal cells, basal section of  $M_2$ , and base of  $R_4^{+5}$ ; sub-epaulet black-brown. Cross veins clouded with dark brown; small, milky-white, circular patch across vein  $R_2^{+3}$  in marginal and first basal cells. Stigma conspicuous, deep sepia brown. Squamae yellowish-white, parchment-like. Haltere pale lemon-yellow, stalk slightly tinged brown.

*Abdomen:* First tergite narrowly black beneath scutellum, grey shading to yellow-brown on anterior lateral corners, yellow-brown around notch in hind margin, but otherwise predominantly yellowish-white contrasting sharply with black mesonotum; hairs recumbent, short, shining white, dark on dark areas. Second tergite bright orange-brown with conspicuous, broad, black patch medially touching anterior border and reaching back to small, pearly-white, median mark which is subrectangular and which has shining, white hairs. Small lateral triangles also have white hairs, elsewhere hairs short, recumbent, black. Third tergite much as second but with only very small central black mark, and much larger median triangle reaching half-way to anterior border. Fourth tergite black-brown with black hairs except on larger conspicuous median triangle nearly reaching anterior border and rather small lateral triangles, where hairs are long, shining white. Fifth, sixth and seventh tergites are all black and only slightly paler on hind margins, without pale hairs except posteriorly on seventh tergite; hairs black, short recumbent, but long, stout and conspicuous laterally on fifth and sixth tergites; along hind margin of last tergite there is a sparse row of long white hairs. Sternites light yellow at base of abdomen, becoming progressively darker, last three sternites black. Second, third and fourth sternites have conspicuous, continuous, broad, white hind margins with white hairs. Hairs elsewhere short, recumbent, black.

*Measurements:* Length including antennae 11.5 mm., wing length 9.5 mm.

*Holotype:* ♀, Hogsback section of Amatola Range in Alice District of Eastern Cape, 2nd November, 1964 (coll. B. R. Stuckenberg). In Natal Museum (Type No. 1163).

*Notes:* The unique specimen was caught in *Podocarpus* forest on a mountain slope, near a stream, where it was attracted to and settled on a stationary Land Rover. It did not fly around buzzing conspicuously like *capensis* does. This was the only specimen seen, despite a considerable time spent watching the vehicle, ourselves and some cattle.



Figs. 17-19. *Limata miranda* n. sp. ♂, (17) dorsal view, (18) antenna, (19) palp.

♂ (fig. 17).

Although the male described here was caught near Kranskop in Natal, very many miles from the Hogsback in the Eastern Cape, it and the female show a good degree of similarity, and were both found in montane forest. However, there are certain differences, which I have listed at the end of the description. This could prove to be the male of another species, but I feel the variation is not more than may be expected in a species of such wide distribution.

*Head:* Eyes holoptic, dull, dark black-brown in dried specimen, with lower facets smaller than upper facets. Hairs numerous, long, pale brown. Ocellar tubercle small, without functional ocelli. Frons shining black at upper end, covered with grey and bronze tomentum which glistens silvery in oblique lighting. Subcallus protuberant in profile thickly covered with tomentum of the same colour. Face grey with pale ashy tomentum largely obscured by long, pale hairs crossing over from lower buccae. Buccae inflated, dark grey with rather thinner ashy tomentum; thicker, whitish tomentum around eye margins. Hairs mostly rather sparse, long fine, pale yellowish-white, but thick on lower buccae. Antennae (fig. 18) charcoal grey; first segment sub-globose, dark in ground colour with grey tomentum and long hairs mostly black, some pale. Second segment short, cup-shaped, the same colour with black hairs, third segment with slight dorsal angle, pale yellowish basally, otherwise charcoal grey, tapering terminal segments with the same colour throughout. Palp as in fig. 19.

*Thorax:* Mesonotum shining black on posterior 3/5, but anterior to the transverse suture is greyish with long fine, pale shining yellowish hairs. The grey humeral and notopleural lobes have long, pale yellowish hairs, as have the postalar callus and prescutellar margin, elsewhere hairs are black. Scutellum black with long, black hairs anteriorly, and very long, fine, pale ones around posterior edge. Pleura with some reddish-brown colour on lower areas but predominantly dark grey. The long, pale hairs are distributed as in the female, but they are longer, fluffier and yellower; in some lights they look pale orange where the tufts are thickest.

*Legs:* Fore coxae light yellow-brown, darker brown at apices, covered with pale, greyish-white tomentum which is thin posteriorly and thick anteriorly, making the general appearance to be grey. Hairs numerous, long, fine, yellowish-white. Mid and hind coxae brownish-grey, with grey tomentum and long, pale yellowish hairs. Remainder of legs very dark red-brown, almost black macroscopically, browner than in female, with longer hairs which are black except on the underside of hind femora where there are some long pale ones.

*Wings:* Similar in venation to female, with smaller stigma which is dark but not as conspicuous as in the female. However the membrane is uniformly hyaline without spotting at the cross veins. Veins light yellow-brown. Halteres yellowish-brown. Squamae parchment white.

*Abdomen:* Basically similar to the female but more hairy, without white on first tergite. First tergite dark, black-brown around scutellum and to lateral borders, pale, pelucid yellow in lateral patches and across hind margin. Hairs long, pale yellowish-white, concentrated to form a shining tuft medially on hind margin. Second tergite yellow-brown laterally and narrowly across hind margin, with small, white, median triangle, extensively black-brown medially in large rectangular patch. Hairs pale along hind margin, in thick tufts on lateral margins, thick and noticeably shining on white median triangle, elsewhere black, laterally on yellow-brown areas as well as on black rectangle. Third tergite yellow-brown, diffusely blackish with small ill-defined median black stripe, hind margin yellowish-white, and small, white, median triangle. Hairs long, pale and yellowish along hind margin and laterally in tufts, and thick on median triangle, otherwise black. Fourth tergite black with black hairs except for pale hind margins, narrow lateral angle and small median triangle, all of which have long, pale yellowish hairs. Fifth, sixth and seventh tergites black with pale hind margins, but hairs are all black except for long, pale ones in lateral tufts and a few pale, median hairs on seventh tergite. Terminalia brown with long, pale hairs. The hairs around the lateral margins, both black and yellow, are conspicuously long. Venter: first sternite yellowish laterally, extensively black-brown medially with thin greyish tomentum, hairs pale yellowish-white. Second sternite yellow-brown laterally in a posteriorly narrowing strip which extends to meet broad yellow band across hind margin, actual hind margin narrowly white; hairs pale yellow. Third sternite yellow-brown with white hind margin; hairs yellowish-white on hind margin, elsewhere semi-erect, mostly black with a few pale ones. Remaining sternites black with black hairs, except for hind margins of fourth and seventh which are pale with pale hairs. The female does not have dark patches on the first sternites and has broader white hind margin on second, third and fourth sternites.

*Measurements:* Length including antennae, 11.0 mm. Wing 8.5 mm.

*Locality:* Zimbaba Forest, Kranskop District, Natal, October, 1954, (coll. B. R. Stuckenberg). In the Natal Museum.

*Notes:* The specimen was resting on a rock by the side of a stream, in a small, steep, forested valley.

The following is a brief comparison of the main differences between the male and female. On the head the differences are sexual and are consequently of no importance. On the thorax the female does not have the mesonotum divided into an anterior grey area and a posterior black one; however there is some fine grey tomentum anteriorly, the grey sub-lateral stripes and the pale hairs extend back only to the transverse suture. The pleura of the male have some brown colouring and the hairs are definitely yellow, whereas the female has white hairs and grey pleura. The wings of the male are without clouds on the cross veins. The legs of the female are black and those of the male very dark brown, but as the male was caught 10 years earlier there may have been some fading of the colours. There are dark patches on the first two sternites of the male and the white hind margins of sternites 2-4 are not so broad. There are black hairs on the notopleural lobe of the female, and yellow ones on the male.

These differences sound considerable, but the general appearances of the flies is remarkably similar, except for greater hairiness of the male which is not unexpected. The differences are not greater than are found in other species. If these are not the same species, they must be very closely related.

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